

CLAIMS

What is claimed is:

1. An signaling method for automatic repeat request comprising:
receiving data frames from a mobile station at a base station; and
selectively gating a physical layer radio channel to provide ACK and NACK
indications responsive to the receipt of the data frames from the mobile
station;
wherein the physical layer radio channel is gated on to provide one of an ACK
and a NACK indication to the mobile station; and
wherein the physical layer radio channel is gated off to provide the other one of
the ACK and NACK indications to the mobile station.
2. The signaling method of claim 1 wherein the physical layer radio channel is gated
on to provide and ACK indication, and is gated off to provide a NACK indication.
3. The signaling method of claim 1 wherein the physical layer radio channel is gated
on to provide a NACK indication, and is gated off to provide an ACK indication.
4. The signaling method of claim 1 wherein the physical layer radio channel is a
time multiplexed channel and contains a logical ACK subchannel with a multiple time
slots.
5. The method of claim 4 wherein the mobile station is assigned to selected time
slots on the ACK subchannel and wherein the physical layer channel is gated on and off
during the selected time slots to provide the ACK and NACK indications to the mobile
station.
6. The method of claim 5 further comprising gating off the physical layer channel in
the selected time slots on the ACK subchannel while the mobile station is idle.

7. The method of claim 1 further comprising repeating each ACK and NACK indication a predetermined number of times.
8. A radio base station comprising:
 - a receiver to receive data frames from a mobile station; and
 - a control unit to provide ACK and NACK indications to the mobile station, the control unit selectively gating a physical layer radio channel to provide ACK and NACK indications responsive to the receipt of the data frames from the mobile station;

wherein the control unit gates the physical layer radio channel on to provide one of an ACK and a NACK indication to the mobile station; and

wherein the control unit gates the physical layer radio channel off to provide the other one of the ACK and NACK indications to the mobile station.
9. The radio base station of claim 8 wherein the control unit gates the physical layer radio channel on to provide an ACK indication, and gates the physical layer radio channel off to provide a NACK indication.
10. The radio base station of claim 8 wherein the control unit gates the physical layer radio channel on to provide and NACK indication, and gates the physical layer radio channel off to provide an ACK indication.
11. The radio base station of claim 8 wherein the physical layer radio channel is a time multiplexed channel and contains a logical ACK subchannel with multiple time slots.
12. The radio base station of claim 11 wherein the mobile station is assigned to selected time slots on the ACK subchannel and wherein the control unit gates the physical layer channel on and off during the selected time slots to provide the ACK and NACK indications to the mobile station.

13. The radio base station of claim 12 wherein the control unit gates the physical layer channel off in the selected time slots on the ACK subchannel while the mobile station is idle.
14. The radio base station of claim 1 further wherein the control unit repeats each ACK and NACK indication a predetermined number of times.
15. An signaling method for automatic repeat request comprising:
 - receiving data packets from a mobile station at a base station;
 - selectively gating a physical layer radio channel to acknowledge data packets received from the mobile station.
16. The method of claim 15 wherein the physical layer radio channel is gated on to provide a positive acknowledgement and is gated off to provide a negative acknowledgment.
17. The method of claim 15 wherein the physical layer radio channel is gated on to provide a negative acknowledgement and is gated off to provide a positive acknowledgement.
18. The signaling method of claim 15 wherein the physical layer radio channel is a time multiplexed channel and contains a logical ACK subchannel with multiple time slots.
19. The method of claim 18 wherein the mobile station is assigned to selected time slots on the ACK subchannel and wherein the physical layer channel is gated on and off during the selected time slots to provide the ACK and NACK indications to the mobile station.
20. The method of claim 19 further comprising gating off the physical layer channel in the selected time slots on the ACK subchannel while the mobile station is idle.
21. The method of claim 15 further comprising repeating each ACK and NACK indication a predetermined number of times.